Control of ADP Resources in CIA

Summary

o   In 1977 the EXCOM adopted an ADP Resource Allocation
     System as a means of monitoring the use of ODP
     resources. Chargeback was considered and rejected in
     favor of this system.

   --   Eighty percent of ODP's resources covered by EXCOM
         review.

   --   Large (over $250K) component-budgeted projects
         reviewed.

   --   Follow-up system illuminates reasons for exceeding
         estimated needs for ADP support.

   --   Proposed investments in the ODP computer utility
         reviewed.

o   Experience with the ADP Resource Allocation System over
     three year period has been good.

o   Charging for ODP computer service in such an environment
     would only antagonize most users.

   --   The real trade-off: Innovation vs. Constraint.

o   The real resource issue facing ODP is not computer
     capacity but the critical shortfall in personnel for
     application development. Our FY 1983 budget speaks to
     this problem.

Control of ADP Resources in CIA

Background

1.   In 1977 the then DDCI asked the Comptroller and the
D/ODP to make recommendations to the EXCOM concerning ways to
improve top management's ability to plan for future ADP resource
requirements and to monitor current use of ODP central services
to ensure visibility to top management of issues arising from
contention for limited ODP resources.   Chargeback was one of four
options considered by the EXCOM to monitor and control the use of
central services.   It was rejected in favor of an ADP Resource
Allocation System.

2.   The arguments for and against chargeback are numerous
and there is no one dominant reason to choose either overhead or
chargeback as the means of allocating ODP costs.   There is a
philosophically complex problem at the heart of the issue.   This
Agency has always encouraged innovation in the use of its
resources.   An overhead system for allocating ODP costs certainly
fosters innovation on our part and on the part of our users in
the use of computer facilities.   This is highly desirable as a
means of improving the quality of intelligence production.   This
tends, of course, to encourage users to substitute "free"
computer resources for other (including scarce human) resources
for which they must pay directly.   The incentive then is to
increase computer usage.   The inevitable growth in ODP central
services is perfectly predictable as a result.

3.   The EXCOM was convinced that the creation of a
deliberate ADP budget during the Agency program review coupled
with a systematic review of major ADP initiatives (new and
ongoing) requiring ODP central services would provide a sound
procedure to contol the use of ODP resources.

The ADP Resource Allocation System

4.   The ADP Resource Allocation System in place today was
adopted by the EXCOM for implementation starting with the Agency
Budget for FY 1979.   An ADP budget is established as a part of
the Agency program review process each fiscal year.   In the
formulation and prioritization of the Agency's budget, ADP
resource requirements are evaluated within the context of

component and directorate responsibilities. In conjunction with
its review of the Agency's Program Plan each year, the EXCOM
focuses attention on the proposed functional uses of ADP and on
proposed major ADP investments. Included are the following:

o   Component ADP activities which in the aggregate exceed
     $250 thousand of component budgeted resources.

o   New ADP initiatives identified in program plans.

o   Expansion of ODP computing capacity.

o   Impact of the ZBB ranking process on requested ADP
     resources.

5.   In addition the EXCOM examines all projects estimated to
consume $250 thousand of ODP resources in the upcoming fiscal
year, thus effectively reviewing about 80% of ODP's service
effort. This results in an EXCOM approved plan for the
consumption of ODP resources for the fiscal year that is
sensitive both to user needs and to the level of resources that
can be committed to the central ADP facility. (Because of
uncertainties related to the appointment of a new management
team, the EXCOM has not yet held its FY 81 ADP review.) As a
means of monitoring the use of the central resource, ODP
publishes a monthly Project Activity Report (PAR) which shows a
detailed breakout by type of service (batch, data entry, labor,
etc.) of the consumption of ODP services by every office and
division of the Agency in terms of an accounting dollar charge.
This report is sent to all office and directorate ADP Control
Officers. In addition, we monitor the expenditure of actual vs.
projected resource utilization and notify the O/Comptroller of
any EXCOM-monitored ADP project that is going to overrun its
projected use. The O/Comptroller requires a written explanation
from the component of the reasons for the overrun. This process
was amended in FY 1980 to require the reporting of major
reductions (20% or more) in expected usage rates for reportable
ADP projects to allow ODP to plan more effectively for the
allocation of the unused capacity.

Benefits of the Allocation Process

6.   The ADP Resource Allocation System provides the EXCOM
with the necessary information concerning component plans for
major ADP investments of their own (e.g., the NDS upgrade at
NPIC, the CRAFT project for the DDO) and ODP plans for computer
system upgrades and major projects to be supported with ODP
resources. The ODP investments in the computer utility have been
supported as a result and our ability to provide utility type
services has never been better. The visibility afforded ODP by
the process has been beneficial in obtaining top management
endorsement of our plans.

7. We believe that the ADP Resource Allocation System is the appropriate vehicle for continued EXCOM involvement in the ADP process. Having obtained EXCOM approval for ODP plans to put computer capacity in place and component plans for use of ODP resources, chargeback has no role to play other than to heighten tensions between ODP and our users, stifle innovations such as SAFE, CRAFT, and the ODP sponsored standard terminal, jeopardize the funding for necessary and expensive administrative systems of Agencywide importance (e.g., PERSIGN, Payroll, etc.) and force uses to seek out ostensibly cheaper nonstandard ways of solving their ADP problems at a time when the entire computer industry is agreed that standards are essential to holding down costs.

Effects of Chargeback on Applications Development

8. The real problem we face centrally is the dramatic shortfall of application development resources to do what is needed. The ADP Resource Allocation System was not intended to address this issue. With the demand for new application development far in excess of the supply of qualified personnel in ODP, charging for even this type of service will still leave components who are able to pay waiting for help. This will, in turn, provide incentive for them to turn to outside contractors for software development that cannot wait for ODP. Such development would bring the added danger of nonstandard hard-to-maintain software which we would be asked to convert, or even worse for which standalone computer equipment would have to be purchased. This very serious shortfall in the supply side is the reason for the software development resource package of 35 positions at the enhanced level in the FY 1983 budget of ODP.

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12 March 1981

Comments on Charge Back

Positives

1.   The budget of the user will provide a control
     over ADP expenditures.

2.   Encourage off-hour, low priority scheduling –
     it will be cheaper.

3.   By the way--We now have a charge back system with
     our outlanders. We provide the body and the user
     pays with a real slot.

4.   Encourage use of different resources with pricing,
     i.e., cut paper vs. regular paper--high charge for
     tape setup and tape storage.

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12 March 1981

Negatives

1. If costs are not commercially competitive,
   users will take their business elsewhere.

2. The algorithms for recovery are often complex,
   and therefore may not be consistent.

3. Manpower and computer systems necessary to pull
   it off. It must have at least two additional
   people in MS.

4. The rich users will get all they want, the poor
   ones will go back to the abacus.

5. ODP has been successful in getting funds for CPU
   upgrades. I don't know how this will change the
   picture.

6. The information stored in our data bases is an
   Agency resource--often used by more than one office.
   Budget limitations in one organization, may retard
   the effective use of computer systems in other
   organizations.

The following are some pros and cons on the subject of change back systems.

PRO'S: ° Provide truer perspective on real costs to allow
          CIA to evaluate program pay-offs verses costs.

         ° Clearly differentiate ODP sales verses overhead,
          allowing us to improve service and productivity.

         ° Force measurement of real costs by ODP, sharpening
          our ability to estimate for new projects.

         ° Take ODP out of any question of favoritism vis-a-
          vis other offices or staffs, and allow Agency
          to truly budget the services.

         ° Will probably significantly reduce maintenance on
          marginal software when they have to pay for it.

         ° Allow a more realistic tradeoff of ODP verses
          contract services.

CON'S: ° In many cases, requires very significant budget
          adjustments of CIA components, probably not
          implementable until FY 84, considering
          impediments placed by comptrolling and audit
          processes.

         ° Places ODP on a demand services basis, while
          we are still inflexible on hiring, adjusting
          machine environments, and talent mix and mobility.

CON'S: (Continued)

    ° May orphan a number of systems which serve a
lot of people a little bit.

    ° Will directly impact our attempts to generalize
applications, when we are cost accountable to
one client.

    ° Implies measuring and accounting which we cannot
support with our present skills and tools.

The major result of implementation of a charge-back system
would seem to be the potential for increase regulation of the
demand for service. That probably would occur but so too
would a larger degree of dysfunctional discussion making.
This would be especially there in the DDA where the offices
like OL and OF are highly interdependent.

A charge-back system implies the ability over a require-
ment to make resource discussion on a decentralized basis and
also implies that the profit center would have the freedom to
make investment discussions in support of the demand for
services. Simply put, where today's customer has the right
to request services in a charge-back environment, he would
the right to demand services. Given our constraints on
hiring personnel, that is, the time frame it takes to get
someone onboard, it would be impossible to react to any
shifts in demand without difficulties in adjustment.

Finally, I would conclude in saying that it would be a far simpler life if we, in fact, could conduct our operation as we would a commercial software enterprise. If we were a profit center, or even a cost center, life would be much simpler. Many decisions would become almost automatic functions of sales profit. However, we do not have that luxury, nor do we even have the luxury of simple return on investment decisions that we would normally accrue to a corporate body in command of their funds. Our limitation on funding things at single year increments and having to budget three years in advance, places extraordinary limits on the flexibility of making capital investment decisions, whether that's in large software systems or hardware systems. It would seem to me that we would run the risk of becoming the other constraints we couldn't deliver. And yet each customer would be our captive to the extent that, for the most part, due to security reasons they wouldn't be allowed to shop around for competitive services.

More

° Any requirement for Offices to budget and pay for
  programming support would lead to more "quick and
  dirty" solution by home grown programmers.

° Who would initiate multi user systems and from whose
  budget would they be funded.

° Why not give the ADP Control Officer more clout to
  screen requirements.

° If we decentralize the budgeting and funding process
  why wouldn't the next step be to decentralize the
  resources (ie programmers).

2 8 MAR 1977

MEMORANDUM FOR: Executive Advisory Group Members

SUBJECT   : Central Planning and Control of Automatic Data Processing

1.   NEED FOR IMPROVEMENT

        In a 16 December 1976 memorandum to Executive Advisory Group (EAG)
members, the DDCI defined four fundamental issues he wished the EAG to
resolve in order to improve central management of automatic data pro-
cessing (ADP) within CIA. He asked the Comptroller and the Director of
Data Processing to make joint recommendations at the next EAG session on
ADP with respect to the first two issues, which were these:

        "First, how can we monitor current month-by-month use of the central
        services provided by the Office of Data Processing (ODP) in such
        a way as to ensure visibility to top management of the many demands
        being levied on ODP by Agency components and permit Agency-level
        decisions to be made on priorities when contentions for limited ODP
        resources arise? The proposed ADP Resource Allocation System which
        the Director of ODP summarized for us (at the November EAG meetings
        on ADP) represents one way we might accomplish this. What other
        options are there? I want the Office of the Comptroller and ODP to
        outline the options available to us so that we may decide among them.

        Second, what can be done to improve top management's ability to plan
        for future ADP resource requirements so that we may assure ourselves
        that the large ADP budget increases we are experiencing are in the
        overall interests of the Agency? How can the key ADP investment
        issues we face be brought forward for top management review so that
        we may establish guidance for the budget planning process? I would
        like the Comptroller to review existing ADP program planning pro-
        cedures and suggest changes which would improve our ability to focus
        on major ADP investment issues—including those which do not fall
        under ODP's jurisdiction, as well as those which do. This should be
        done for the same EAG meeting."

        In his memo, the DDCI pointed out that during the FY 1978 budget review
the Committee on Foreign Intelligence (CFI) and the Office of Management and
Budget (OMB) had said that central management of the Agency's ADP activity
should be improved. The cuts they imposed were in fact specifically in-
tended to stimulate such improvement. This point was reinforced on
9 February 1977 when the Policy Review Committee (PRC), successor to
the CFI, included the following admonition within its FY 1979 guidance
to CIA: "Give greater emphasis to control of ADP resources and provide
senior management with the means of reviewing ADP justifications from
a user point of view."

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There seems to be no question that improved means of central planning and control of the use of ADP resources are necessary. What is at issue is the degree to which central planning and control is desirable and the extent to which EAG members are able to devote time to this pursuit.

2. PLANNING (Issue # 2 above)

In an examination of alternatives, it is best to begin with the second issue identified by the DDCI--planning. Planning is preliminary to monitoring, and it encompasses a larger sphere of ADP activity. The first issue--one of control--focuses exclusively on the central services provided by ODP, which are essentially "free" to Agency components requesting them and are therefore unconstrained by the limited resources of the components themselves.

Planning is geared to the budgetary process.

2.1 "The ADP Budget"

As things stand, the Agency's "ADP budget" does not really represent a coherent budget or program at all. It is merely a summary--a set of totals which are put together each year by the Office of the Comptroller from special ADP schedules submitted by CIA components prior to presentation of the CIA budget to OMB in October. This year an ADP summary was provided to Congress as well (at its renewed request), in the same OMB-prescribed format.

Our ADP budget is also rather arbitrary in nature, as the result of technological progress which is making it increasingly difficult to define clearly what constitutes "ADP." For example, special-purpose NPIC computers are excluded from the ADP totals. OCR's project ADSTAR (to store documents in an automated micrographics system) is also excluded, although it is managed by ODP and although ISS includes a similar project (DORIC) within the ADP totals. Separating the ADP portions of our SIGINT, communications, printing, and word-processing activity has proven to be difficult. It has also been difficult in many instances to decide how people who perform ADP tasks should be identified in the CIA budget. For example, several professional analysts are now programming on their own desk-side computer terminals. Are they analysts who program, or are they computer programmers who analyze?

Deficiencies notwithstanding, the Agency's ADP budget, following cuts by the CFI and OMB for FY 1978 ($1 million across the board and $1.7 million for SAFE) shows that ADP expenditures are not only continuing to increase steadily, but are consuming an ever-increasing portion of the Agency's total Budget:

25X1

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a. The definition problem, mentioned above, is very troublesome, particularly as ADP becomes an increasingly integral part of many of the things we do on a decentralized basis.

b. ADP decisions involve technical complexity which often hinders the presentation of key issues to general managers in understandable terms.

c. The ADP budget is made up of numerous bits and pieces which are difficult to aggregate for clear-cut decision-making; yet it is not enough to review only the large projects if cumulative growth is to be successfully controlled.

d. The use of existing ADP systems, the need to effect improvements in them, and the many moderate initiatives which typically arise during the operating year have proven very difficult to predict with any specificity two years in advance for the normal program review process.

2.2.2 <u>Better Information</u>

The above problems will never be completely surmountable. However, better information regarding planned ADP activity, properly presented in a form which can be understood by central management, can go a long way toward their alleviation.

A significant step has already been taken in this regard: The FY 1979 Program Call, for the first time, requests (1) that all resource packages submitted by components this Spring include a statement of their ADP requirements (funds and positions), (2) that components submit ADP summaries for the June review process (as well as for OMB and Congress), (3) that ADP requirements be included in components' five-year projections, and (4) that requirements for new systems be fully explained and justified within program packages.

Basic information, therefore, previously unavailable at review time, will now become centrally available from program submissions. This data can be constructed by the Office of the Comptroller into a special presentation, within the Agency Program Book, for EAG discussion and DDCI decision.

The question remains one of scope. Certainly, the EAG will wish to compare the overall ADP totals and the general thrust of our Agency-wide ADP activity. Beyond that, the EAG may choose to perform little additional review, to direct further attention to significant program elements, or to examine the entire ADP program in some detail.

2.3 <u>Planning Options</u>

More specifically, there are four basic options:

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SECRET

2.3.1   Option 1

Limit EAG review to a broad overview of the FY 1979 ADP program which
will be formed from the individual proposals of separate Agency com-
ponents, concentrating on such things as comparisons with FY 1978,
directorate shares, and broad functional breakdowns of use (e.g.,
for administration, imagery, SIGINT, namechecking, intelligence
analysis). While this may sound like very little, it would in
fact represent a significant departure from the past, in which
no such review has been undertaken. The disadvantage of this minimal
effort is that it provides very limited ability for the EAG to
modify the ADP budget intelligently or to appraise any trade-offs
properly. This approach would consciously perpetuate the current
delegation of ADP decisions to the directorates and offices, at
least for the time being.

2.3.2   Option 2

In addition to the above, the EAG would focus its attention upon
the most important elements of the program: SAFE, NPIC's New Data
System, ODP's expansion plans, and any important new projects iden-
tified by the resource packages.

2.3.3   Option 3

The EAG would concentrate additionally upon the key projects of
the other components spending more than $250 thousand on ADP (ISS,
OL, OCR, CSO, OS, OWI, ODE, and ORD, as set forth above) and on
the approximately 20 projects run for various components by ODP
which are expected, by ODP's best estimates, to cost more than
$250 thousand in the program year. Another threshold might be chosen,
but this one is convenient and would permit close scrutiny of about
70 percent of the ADP budget.

2.3.4   Option 4

The EAG would examine the entire projected ADP budget, which would
be presented, insofar as possible, in terms of understandable pro-
jects, conveniently aggregated and highlighted (e.g., STAR, the
personnel system, the accounting system, etc.).

No additional resources are required to exercise any of the above op-
tions, except that increasing amounts of managerial time on the part of
ODP, the Office of the Comptroller, and EAG members themselves would ob-
viously be involved.

2.4   Recommendation

Option 3 is recommended. Focusing upon the major ADP investment
issues, it appears to satisfy best the expressed wishes of the DDCI in
his statement of the issue above. Options 1 and 2 do not appear to go far
enough, though option 2 would provide a respectable initial effort this

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year. Option 4 is problematic, in that ODP's 50 percent of the ADP budget cannot be broken down precisely by project or even by using component two years in advance and is best managed through a control mechanism which functions throughout the operating year, discussed below.

Option 3 would allow the EAG in June to set deliberate ADP program totals, to agree upon functional application areas which should receive emphasis, to make realistic resource adjustments among the large ADP projects as necessary, to curtail any project initiatives which appear to require further study, and to review ODP expansion plans. This approach would also best complement the option recommended in the following section to control requirements for the use of ODP's central services.

Whichever option the EAG selects, the planning process should be augmented during next year's (FY 1980) program review process through EAG consideration of ADP as a key topic for the provision of guidance prior to program preparation by individual Agency components in the Spring of 1978.

2.5   Policy Planning

Planning has been discussed above exclusively within a program and budgetary context, because that is the way the planning issue was framed—reserving consideration of ADP organizational issues (the latter two issues defined by the DDCI in the above-cited memorandum) for discussion at the next EAG meeting on ADP. Nevertheless, it is important to emphasize here that central ADP planning should involve more than programming and budgeting if ADP is to be kept cost effective.

We keenly feel the need for an inter-directorate ADP policy planning committee which would function just below the EAG level. Prior to EAG consideration of guidance for the FY 1980 program, this committee would hold a series of meetings to discuss Agency-wide ADP goals, issues, opportunities and priorities, and to produce a multi-year plan as a basis for the subsequent establishment of EAG policy guidance. The committee could also serve a role within the budgetary process itself next year by meeting to review the presentation of ADP in the Agency Program Book immediately prior to the EAG review itself. It would certainly find other opportune times to meet as it becomes established.

This committee, we suggest, would probably best be composed of the directors or deputy directors of the major offices using ADP (NPIC, OCR, and ISS), would include representatives from OC, OL, OS, ORD, Ops/Cen., and the O/Compt., and would be chaired by the Director of Data Processing.

We believe the EAG should withhold decision on this particular proposal, however, until the next EAG session on ADP, which will discuss related ADP organizational issues.

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3.   MONITORING THE USE OF CENTRAL SERVICES (Issue #1 above)

     This section will address the first issue identified by the DDCI--
that of devising a means of monitoring the current month-by-month use
of central ADP services provided by ODP.

3.1   Introduction

     These services represent a finite resource which is normally acquired
in large blocks because of economies of scale and limitations of the hardware
sizes that are available. The capacity of our hardware systems does not
represent a hard limit on how much work any given system can accommodate.
They will accept an overload, but service degrades and backlogs occur.
During overload periods service becomes inadequate and unacceptable.

     Reserve capacity is usually planned when new systems are acquired in
order to satisfy peak workloads and provide for growth. There are some
views in the Agency that this reserve capacity should be used just because
it is there, it is paid for, and it is "free." However, as this reserve
capacity gets consumed, it hastens the day when a larger system must be
procured. The most effective way that major hardware expenditures for
central services can be controlled is to control the _use_ of current system
capacity and the rate at which reserve capacity is consumed.

     Accordingly, it is our view that senior management needs to do more
than monitor month-to-month use of central services. (It has been able
to do that since 1973, as explained below.) Senior management must also
control the month-to-month use of central services.

3.2   The Present System of Monitoring

     At the beginning of FY 1973 ODP started distributing a monthly Project
Activity Report to each office using central services. This report, which
was forwarded to office directors, contained detailed charges for each of
the services at the project level. In FY 1974 a Resource Allocation System
was approved by the Agency Management Committee to improve management control
over the use of central services. This system was unsuccessful because
no clear responsibility was established for review and control of central
services. Therefore in FY 1975 office and directorate ADP Control Officers
were designated to review requests for allocations of central services at
the beginning of the fiscal year and changes in requests during the fiscal
year. However, the Resource Allocation System was not continued in FY 1975
because the Comptroller was not able to reach an agreement with the direc-
torates on reducing their requirements for ODP services to the available
capacity. (It turned out that the components' projected requirements were
overstated and the actual workload was within the existing capacity.)

     Currently, monthly reports showing the consumption of ODP services
by each of 41 Agency offices and divisions are produced. For example, it
is possible to determine how much of the service given to the Office of
Finance went to the Financial Resources System.

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The normally serves as ADP Control Officers. They are expected to review their components' use of ODP services and to determine whether the level of services used was justified.

3.3 Options for Monitoring and Control

There are many ways to build a system for management to monitor and control the use of central services. Some options only provide a monitoring capability, such as the current system, which shows what level of ADP services is provided to each component. Other options would provide an opportunity for Agency management to control as well as monitor. For example, management could place specific limits on the level of services to be provided to each component and then monitor the use of these services. Also management could review and approve specific projects requiring ADP service to ensure that their use of ADP services is justified. Another option would provide for component management itself to control the use of ADP services by budgeting for ADP services and paying for services rendered. Under this option Agency-level management could review and control as the Agency's Program is being developed.

It is very important to understand that whichever option is chosen to monitor and control, its effectiveness will be directly proportional to the amount of management time that is allocated. Furthermore, the option chosen should have a link to the planning/budgeting process. The provider of central ADP services, ODP, should not be expected to control the manner in which the service is used because this would place ODP in a conflict of interest situation. Instead, control should be effected by the same managers who are receiving justification and controlling the use of other Agency resources.

3.4 Specific Options

Four basic options for monitoring and control are examined below. Each option could stand alone or could be combined with another option to take advantage of a strong feature. Several variations of each basic option are possible.

3.4.1 Analysis of Trends in Monthly Use (Option 1)

The existing Project Activity Report would be provided, which includes each Agency component and project. This report shows the manpower and computer facilities used during the previous month and totals for the fiscal year. In addition, a narrative analysis would discuss significant changes from previous months in terms of service provided to major users as well as the total amount of service provided to all users. A summary of the data distributed could be reviewed in the monthly Comptroller's meeting if desired. The information provided by this option is after-the-fact and no limitations would be placed on the level of service components can use.

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3.4.2 Resource Allocation (Option 2)

Agency components would be annually allocated a level of ADP service by the Comptroller. The level would be based on the previous consumption rate plus any major new requirements. By limiting the allocation, the consumption of reserve ADP capacity could be controlled. During the allocation process conflicting priorities could be examined by the Comptroller. Monthly reports on actual consumption rates would be provided by ODP. These reports would be reviewed during the monthly Comptroller's meetings and a provision to meet unexpected needs would be provided by reallocation decisions. Service could be terminated if an allocation is exceeded unless management decides otherwise. This option could provide a positive control over growth.

3.4.3 Project Review (Option 3)

Annually, major users would express requirements in the form of "Projects" which would state the level of service needed. Each project would also include a statement of why service is needed with the justification tied to the component's mission. Projects would be presented to the EAG for review. The EAG would be advised of whether central service can accommodate proposed projects without expansion. Then the EAG would either approve or disapprove the projects and could set priorities. The existing Project Activity Report could be used to monitor month-to-month activity. In addition, special monthly reports on actual consumption by the projects which had been reviewed and validated could be provided if desired.

3.4.4 Chargeback (Option 4)

ODP would publish a rate schedule for the various central services it provides. The schedule would be structured to assure reasonable stability of rates. The using components would include funds in their budgets for purchasing central ADP services at the published rates. At the beginning of each fiscal year a PRA-type account for these central services would be established for each component. Monthly reports would be provided to components showing their consumption and balance. Capital outlays for major new equipment probably should not be included in the rate schedule unless a revolving capital fund could be established. Therefore, ODP would budget separately for major equipment additions.

3.5 Analysis of Options

The four options described above are compared below in terms of strengths and weaknesses in the following areas:

    a.   senior management monitoring of month-to-month use of central ADP services;

    b.   senior management control of priorities and growth;

    c.   visibility of cost/benefits of ADP use;

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   d. link to planning and budgeting process; and

   e. cost to establish and administer.

3.5.1 <u>Option 1: Analysis of Trends in Monthly Use</u>

       This option provides good visibility of month-to-month use of all
services but it is after-the-fact. There is no opportunity for management
to control use. It is not possible to determine the cost/benefit before
an investment has been made in a system. This option could be used to
resolve short-term priority issues but it does not provide a link to
planning and budgeting. There would be no additional costs to implement
and administer this system except for the time required by senior management
to review the monthly reports.

3.5.2 <u>Option 2: Resource Allocation</u>

       This option provides good visibility and the opportunity to control
use at the office or division level. The main value would be to control
the rate at which reserve ADP capacity is consumed. There would not be
any link to planning and budgeting for additional ADP capacity. This option
could be used to resolve short-term priority issues. It does not provide
the necessary visibility for cost/benefit comparisons. The cost and
time to implement this system would be minimal except for the time used
for monthly review.

3.5.3 <u>Option 3: Project Review</u>

       This option provides complete visibility of the level of ADP resources
required for each major application. The benefits derived by the user
office from the use of these resources would be clearly identified, as
well as the impact of each application on the capacity of the central ADP
resource. Senior management would have the opportunity to control use of
ADP resources with the full knowledge of the impact of approval/disapproval
on the mission of the user component. The consumption of ADP resources by
approved major applications could be monitored on a month-to-month basis.
Project Review could be readily linked to the planning and budgeting process
described in the PLANNING section above. The costs to implement would
initially include approximately 24 hours of senior management (EAG meeting)
time to review and validate current major applications. Thereafter much
less time would be required to review new projects and previously approved
projects with significant increased requirements. In addition, there would
be heavy involvement by user offices and ODP in preparing project information
for management review. This is the only option that provides senior
management with ability to review ADP justification from a user point of view,
in accordance with PRC guidance for FY 1979. The time for implementation
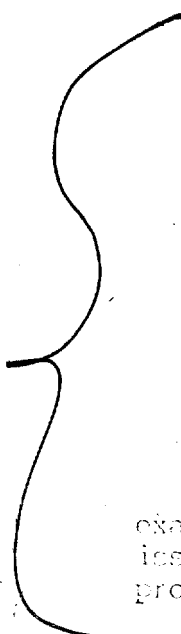would be four months.

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3.5.4 Option 4: Chargeback

This provides visibility and the opportunity for management control during the budget process. Because it places full responsibility on using components, it would require a minimum amount of senior management time. In addition, it could provide many of the advantages of Option 3, Project Review, above, but there is danger that resources for ADP would become buried in the overall budget. Because of the uncertainties this option could introduce into ODP planning and budgeting, regulations probably should be published prohibiting user components from obtaining services from other sources for a three to five year period until the Chargeback system has a chance to stabilize. The cost to develop and implement would be about $400,000, including five workyears of development, and the cost to administer would include at least four full-time positions in ODP plus annual computer facility operating costs of $150,000. Additional manpower would be required in each user component. The time to implement would exceed one year.

3.6 Recommendation

Project Review (Option 3), coupled with the planning procedures recommended above, represents the most practical and effective approach to managing the growth of central ADP services in the Agency. Resource Allocation (Option 2), while less effective as a planning vehicle, would provide for effective near-term growth control.

4. IMPLEMENTATION PLAN FOR RECOMMENDED ACTIONS

We recommend that the EAG:

a. Establish a deliberate ADP budget during the Agency program review in June--focusing broadly on functional use of ADP, on the key computer projects of Agency components that will spend over $250 thousand on ADP during the program year, on ODP-supported projects which are expected to cost over $250 thousand, on ODP expansion plans, and on any important new projects identified by components' resource packages.

b. During the operating year, perform a thorough, systematic review of the cost effectiveness of all major projects which are currently supported by ODP's central services--to be presented in a brief, understandable format so that justifications may be appreciated from a managerial point of view.

These two recommendations should serve to satisfy both our budget examiners and ourselves that the Agency has reviewed major ADP investment issues in establishing its FY 1979 program and should provide a sound procedure to control the use of ODP's central services.

We have avoided detailed elaboration of our recommendations and of the other options we have presented in order that the EAG may decide among them with a minimum of complication. Much work will have to be done to arrive at a precise means of implementation following the receipt of EAG direction. We envision, however, this timetable if the EAG accepts our two recommendations:

April–July 1977	Development of project review system and of project presentations by ODP with the participation of user components;
May 1977	Comptroller preparation for EAG review of FY 1979 ADP program;
June 1977	EAG session on ADP program (within the context of sessions on the total Agency program);
August–November 1977	24 hours of EAG meeting time to review ODP-supported projects;
December 1977.	EAG provision of guidance on ADP for FY 1980 program preparation (within the context of guidance for the total Agency program);
1978	Same schedule, but much less of an EAG workload, since the EAG review of ODP-supported projects would concentrate on new initiatives and on needs for significantly increased resource requirements.

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Clifford D. May, Jr.
· Director of Data Processing

James H. Taylor
Comptroller

ODP 637-77
5 April 1977

MEMORANDUM FOR: Executive Advisory Group Members

SUBJECT   : Definitions of ADP and ADP Personnel

1. SUMMARY

Summarized below are the present definitions of ADP systems and ADP personnel that can be found in authoritative regulations applicable to CIA. Paragraph 5. presents, for EAG approval, the definitions consistent with these regulations that appear to be most suitable for the purposes of planning, budgeting, and management control of ADP in CIA.

2. BACKGROUND

The basic law from which all policies, regulations, and guidelines in government-wide ADP procurement and management derive is Public Law 89-306 or the Brooks Bill (dated October 30, 1965). Derivative from the Brooks Bill are three government-wide policy directives of interest in this discussion:

   a.   GSA's Federal Management Circular 74-2 (FMC 74-2) dated February 25, 1974, on ADP management information system. This circular prescribes the policy and criteria for the continuing development of a management information system (MIS) containing inventory, functional use, and financial management data on Federal Agency ADP systems. (FMC 74-2 is codified in the Code of Federal Regulations as 34 CFR 281).

   b.   GSA's Federal Management Circular 74-5 (FMC 74-5) dated July 30, 1974. This circular establishes policies for the management, acquisition, and utilization of ADP equipment (ADPE), software, maintenance, ADP-related services, and supplies. (FMC 74-5 is codified in the Code of Federal Regulations as 34 CFR 282).

   c.   OMB's Circular A-11, dated July 16, 1976, deals with guidance for the preparation and submission of budget estimates. A-11 requests data for federal agencies on the acquisition, operation, and use of ADP.

FMC 74-2 and FMC 74-5 provide definitions on ADP equip-
ment, while OMB A-11 provides a framework for a definition
of ADP personnel.

3.   AVAILABLE DEFINITIONS

a.   FMC 74-2 provides the following definition
for ADP equipment:

ADPE includes "general purpose and special purpose
(built to Government specifications) electronic
data processing equipment and punchcard accounting
machines irrespective of use, application, or
source of funding."

For the purpose of reporting, however, the FMC
exempts analog computers (but not the digital portion
of a hybrid system) and ADP equipment "which is both
integral to a combat weapon or space system, and
built or modified to special Government design."
A partial exemption from reporting is also provided
for control system equipment, defined as "ADP equip-
ment which is an integral part of a total facility
or larger complex of equipment and has the primary
purpose of controlling, monitoring, analyzing, or
measuring a process or other equipment."

b.   FMC 74-5 provides the following definition of
ADPE:

"Automatic data processing equipment (ADPE) means
general purpose commercially available, and mass-
produced automatic data processing components and
the hardware systems created from them regardless
of use, size, capacity, or price that are designed
to be applied to the solution or processing of a
variety of problems or applications and are not
specifically designed (not configured) for any
specific applications. It includes:

"a)   Digital, analog, or hybrid computer equip-
        ment; and/or

"b)   Auxiliary or accessoral equipment such as
        plotters, tape cleaners, tape testers,
        source data automation recording equipment
        (optical character recognition equipment,
        paper tape typewriters, magnetic tape cart-
        ridge typewriters, and other data acquisition
        devices), to be used in support of digital,

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analog, or hybrid computer equipment, either
cable connected, wire connected, or self-
standing and whether selected or acquired
with a computer, or separately; and/or

"c)   Punched card accounting machines (PCAM)
used in conjunction with or independently
of digital, analog, or hybrid computers,
and

"d)   Data transmission or communications equip-
ment that is selected and acquired solely
or primarily for use with a configuration
of ADPE which includes an electronic
computer."

c.   OMB Circular A-11 refers to the definition in
FMC 74-2 for ADPE. On the subject of ADP personnel,
A-11, however, does provide guidance. For the purpose
of budget reporting, agencies should use their own
"work distribution system relative to ADP" or, in
the absence of such systems, A-11 provides guidelines
that can be paraphrased as follows: ADP personnel
are those individuals connected with ADP or ADP-
related support functions (e.g., ADP policy and
management officials, systems development and oper-
ations personnel, secretarial support, etc.). In-
cluded are personnel from ADP user organizations
"principally assigned to ADP support functions for
the user organization." However, personnel in user
organizations "who simply use ADP incidental to the
performance of their primary function" are not to be
considered ADP personnel.

4.   DISCUSSION

The definitions of ADPE as presented in FMC 74-2 (with
stated exclusions) and in FMC 74-5, are generally consistent.
We believe, however, that the FMC 74-5 definition is preferable
for the following reasons:

a.   FMC 74-5 specifically includes the gamut of
peripherals, analog and hybrid computers.

b.   FMC 74-5 makes a clear distinction between general
purpose and special purpose hardware that, we believe, is
more applicable in the Agency environment. FMC 74-5 in-
cludes, under ADPE, specifically configured, general
purpose computers, whereas FMC 74-2 does not address
this issue. FMC 74-5 excludes from the ADPE category

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specifically designed hardware used for a specific application; FMC 74-2 treats this topic more narrowly, only excluding control systems and weapon- and space-related hardware.

The definition of ADP personnel given in A-11 is considered useful and appropriate for Agency purposes.

The problem area in the A-11 definition is the inclusion of user organization personnel who are "principally assigned to ADP support functions." Disputes as to whether personnel should be described as principally assigned to ADP support or to analytic or some other type of support for the user group would essentially have to be resolved on a case-by-case basis. Ultimately, some degree of imprecision is probably unavoidable in definitions of this type. But what is clear from the A-11 guidelines is that "ADP personnel," by definition, can and do exist outside the confines of the centralized ADP service.

5. RECOMMENDATIONS

For purposes of ADP planning, budgeting, and management control in CIA, it is recommended that the following definitions be approved:

a. ADP Equipment

Automatic data processing equipment (ADPE) means general purpose commercially available, and mass-produced automatic data processing components and the hardware systems created from them regardless of use, size, capacity, or price that are designed to be applied to the solution or processing of a variety of problems or applications. ADPE does not include specifically designed equipment intended for a specific application, or a component of a general purpose computer system which is imbeded in a larger equipment system intended to satisfy a specific application.

b. ADP Personnel

ADP Personnel are those individuals connected with ADP or ADP-related support functions (e.g., ADP policy and management officials, systems development, applications development, and operations personnel, etc.). Included are personnel from ADP user organizations principally assigned to ADP support functions in support

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of others in the user organization. However, personnel
in user organizations who simply use ADP incidental
to the performance of their primary function are not
to be considered ADP personnel.

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Clifford D. May, Jr.
Director of Data Processing

ROUTING AND RECORD SHEET

SUBJECT: (Optional)

Control of ADP Resources in CIA

FROM:		EXTENSION	NO.
D/ODP/DDA 2-D-00 HQS.			DATE **2 4 MAR 1981**

TO: (Officer designation, room number, and building)	DATE		OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
	RECEIVED	FORWARDED		
1. ADDA, BX-4				Bill: Attached is a brief report on the the ADP Resource Allocation System, including a few words of background and description of the way the system works and a bit about its benefits. It closes with a paragraph on the relationship between chargeback and our major resource problem, which is, of course, the availability of personnel for applications development. We have also prepared a brief summary with a series of bullets highlighting the main points.
2.				
3.				
4.				
5.				
6.				
7.				If this does not meet your needs or if you want us to expand upon any of the points made here, please let me know.
8.				
9.				
10.				As noted parenthetically in paragraph 5, because of uncertainty relating to the role of the Executive Committee under the Agency's new management, we have not yet had the opportunity to present our annual ADP report for 1981 to the Executive Committee.
11.				
12.				
13.				
14.				/s/ Bruce T. Johnson Bruce Johnson
15.				Att: a/s

FORM **610** USE PREVIOUS EDITIONS
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